

Patent claims

1. Method to generate a print image on a carrier material (40),
- 5 in that the surface of a print carrier (40) is coated with an ink-repelling or ink-attracting layer made from fountain solution (54),
- in a structuring process, ink-attracting regions and ink-repelling regions are generated corresponding to the structure of the print image to be printed,
- 10 ink that adheres to the ink-attracting regions and that is not absorbed by the ink-repelling regions is applied on the surface,
- the applied ink is transferred onto the carrier material (40) in the further course,
- 15 before a new structuring process on the same surface of the print carrier (10), this surface is cleaned and re-coated with an ink-repelling or ink-attracting layer (54),
- 20 before the application of the ink-repelling or ink-attracting layer (54), a wetting-aiding substance (52) is applied in molecular layer thickness on the surface of the print carrier (10),
- 25 a surfactant with hydrophilic molecule sections is used as a wetting-aiding substance (52), and
- in that the layer thickness for the wetting-aiding substance (52) is smaller than 0.1 μm .
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2. Method according to claim 1, in that a fountain solution (54) based on water is used as an ink-repelling layer.
3. Method according to any of the preceding claims, in that the layer thickness
5 of the ink-repelling layer (54) is smaller than 1 μm .
4. Method according to any of the preceding claims, in that the surface of the print carrier (10) has a roughness that is smaller than the roughness used in the standard offset printing method.
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5. Method according to claim 4, in that the average roughness R_z is smaller than 10 μm , preferably smaller than 5 μm .
6. Method according to claim 4 or 5, in that the average roughness value R_a of the surface of the print carrier (10) is smaller than 2 μm , preferably smaller than 1 μm .
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7. Method according to any of the preceding claims, in that digitally-controlled radiation is used for structuring.
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8. Method according to claim 7, in that the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.
9. Method according to any of the preceding claims, in that a plurality of printing events ensues before a restructuring of the surface, whereby the print carrier (10) is inked multiple successive times.
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10. Method according to any of the preceding claims, in that the surface of the print carrier (10) is a continuous band or a generated cylinder surface.
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11. Method according to any of the preceding claims, in that an ink separation ensues before the transfer of the ink onto the carrier material (40).
12. Device to generate a print image on a carrier material (40),
5 in which means are provided via which

the surface of a print carrier (40) is coated with an ink-repelling or ink-attracting layer (54) made from fountain solution,
10 in a structuring process, ink-attracting regions and ink-repelling regions are generated corresponding to the structure of the print image to be printed,

ink that adheres to the ink-attracting regions and that is not absorbed by the
15 ink-repelling regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

20 before a new structuring process on the same surface of the print carrier (10), this surface is cleaned and re-coated with an ink-repelling or ink-attracting layer (54),

via which, before the application of the ink-repelling or ink-attracting layer
25 (54), a wetting-aiding substance (52) is applied in molecular layer thickness on the surface of the print carrier (10),

a surfactant with hydrophilic molecule sections is used as a wetting-aiding substance (52), and
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whereby the layer thickness for the wetting-aiding substance (52) is smaller than 0.1 μm .

13. Device according to claim 12, in that a fountain solution (54) based on
5 water is used as an ink-repelling layer.
14. Device according to one of the preceding claims 12 or 13, in that the layer
thickness of the ink-repelling layer (54) is smaller than 1 μm .
- 10 15. Device according to any of the preceding claims 12 through 14, in that the
surface of the print carrier (10) has a roughness that is smaller than the
roughness used in the standard offset printing method.
16. Device according to claim 15, in that the average roughness R_z is smaller
15 than 10 μm , preferably smaller than 5 μm .
17. Device according to claim 15 or 16, in that the average roughness value R_a
of the surface of the print carrier (10) is smaller than 2 μm , preferably
smaller than 1 μm .
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18. Device according to any of the preceding claims 12 through 17, in that
digitally-controlled radiation is used for structuring.
19. Device according to claim 18, in that the radiation of a laser system, a laser,
25 laser diodes, LEDs or a laser diode array is used.